

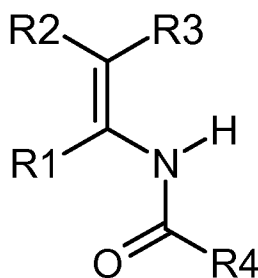
## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims:**

1-11. (Cancelled)

12. (Currently amended) A process for the production of enamide ~~derivatives~~  
compounds suitable for large scale production represented by formula (I)



(I)

wherein;

R1 and R2 and R3 are independently selected from the group consisting of a hydrogen atom; an alkyl; a cycloalkyl; a cycloalkylalkyl; an alkylaryl; an aryl; a heterocycle; a cyano; an alkoxy; an aryloxy; a carboxyl; a carbamoyl; -CONR5R6 in which R5 and R6 are independently selected from an alkyl, an arylalkyl, an aryl; and R5 and R6 taken together may form a ring; and -COOR5 in which R5 is selected from an alkyl, an alkylaryl, a cycloalkyl, and aryl;

said alkyl, cycloalkyl, cycloalkylalkyl, alkylaryl and aryl being substituted or not substituted with a group selected from a functional group and R5;

R1 and R2 taken together may form a monocyclic ring ; a di-cyclic ring and a higher

polycyclic ring, said ring being substituted or not substituted with a group selected from a functional group and R5;

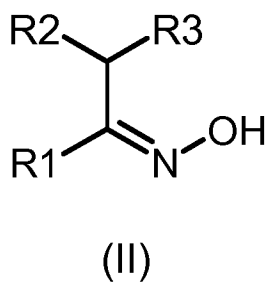
R4 is selected from the group consisting of a hydrogen atom, alkyl, aryl and alkylaryl; said alkyl, aryl, and alkylaryl being substituted or not substituted with halogen;

X is selected from an oxygen atom or a leaving group;

m is an integer selected from 1 and 2;

when m is 1 X is a leaving group; when m is 2 X is an oxygen atom;

said method comprising a hydrogenation/isomerization reaction in presence of a heterogeneous catalyst based on at least one metal selected from Ir and Rh, of an oxime derivative of formula (II)



wherein R1, R2 and R3 are as defined above;

with an acyl derivative of formula (III):



wherein R4, m and X are as defined above;

X is selected from an oxygen atom and a leaving group;

m is an integer selected from 1 and 2;

when m is 1 then X is a leaving group; when m is 2 then X is an oxygen atom.

13. (Previously presented) The process of claims 12, wherein the derivative of formula (III) is used in the amount selected from at least 2 times per mole based on the oxime, and an amount sufficient to act as a reacting agent and as a solvent.

14. (Canceled)

15. (Previously presented) The process of claim 12, wherein the heterogeneous catalyst is in a form selected from a metal oxide and from a metallic form, optionally supported on a suitable carrier; and is used in an amount ranging between 0.001 and 30% mole, based on the oxime derivative.

16. (Previously presented) The process of claim 12, which is carried out in a suitable solvent.

17. (Previously presented) The process of claim 12, which is carried out under a hydrogen pressure ranging between 0.5 and 20 bars.

18. (Previously presented) The process of claim 12, which is carried out under a temperature ranging between -20 and 150 °C.

19. (Previously presented) The process of claim 12, further comprising a work up step of an organic solution of the compound of formula (I) which is a washing step with water containing organic or mineral salt(s) without halogen atom.

20. (Previously presented) The process of claim 19, wherein the organic or mineral salt(s) is/ are selected from the group consisting of phosphate, sulfate, acetate, citrate, formate, borate, carbonate, or ammonium.

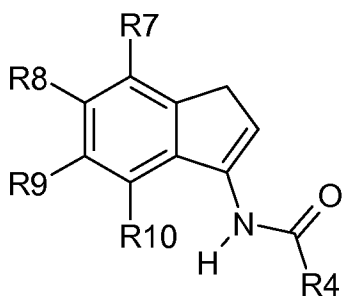
21. (Previously presented) The process of claim 12, wherein said enamide is selected from the group consisting of:

- N-(6-Methoxy-3H-inden-1-yl)-acetamide;
- N(3,4-dihydro-1-naphtalenyl)acetamide;
- N(3,4-dihydro-naphtalen-2-yl)acetamide;
- N-(2-Phenyl-cyclohex-1-enyl)-acetamide; and
- N-(7-Methoxy-3,4-dihydro-naphthalen-2-yl)-acetamide.

22. (Withdrawn and currently amended) A method of manufacture of an amine or an amide compound suitable for large scale production of a pharmaceutical substance comprising:

performing a hydrogenation reaction of a enamide compound selected from:

- a) an ene-amide of formula (IIE)



(IIE)

wherein R4 is selected from the group consisting of hydrogen, alkyl, aryl and alkylaryl; said alkyl, aryl, and alkylaryl being substituted or not substituted with halogen;

R7, R8, R9 and R10 are independently selected from the group consisting of hydrogen; functional group, halogen; a group comprising -OH, -OR5, -CN, -COOR5, -COR5, -CONR5R6, -OCOR5, -NH2, -NHR5, -NR5R6, -NO2, -SH and -SR5, wherein R5 and R6 are independently an alkyl, an alkylaryl or an aryl group or R5 and R6 taken together may form a ring; alkyl and aryl, while not simultaneously being hydrogen;

- b) N(3,4-dihydro-1-naphtalenyl)acetamide;
- c) N(3,4-dihydro-naphtalen-2-yl) acetamide;

d) N-(2-Phenyl-cyclohex-1-enyl)-acetamide; and

e) N-(7-Methoxy-3,4-dihydro-naphthalen-2-yl)-acetamide;

to obtain a hydrogenated compound;

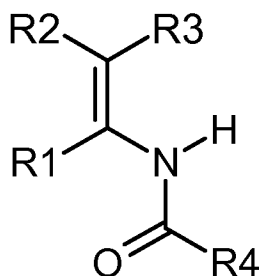
said method comprising, prior to said hydrogenation reaction of said enamide, preparing said enamide by wherein said enamide has been prepared by performing a hydrogenation/isomerisation reaction of the corresponding oxime in the presence of a heterogeneous catalyst based on at least one metal selected from Ir and Rh, with an acyl derivative of formula (III)  $(R_4CO)_mX$ , to obtain a hydrogenated compound of formula I, by the method as defined in claim 12 wherein R1 and R2 taken together form a di-cyclic ring; and said hydrogenated compound of formula I is further used as an intermediate in the synthesis of said pharmaceutical substance.

23. (Withdrawn) The method of claim 22, wherein said hydrogenation reaction performs an asymmetric hydrogenation of said compound of formula (IIE), thereby obtaining a chiral amide or amine.

24. (Withdrawn) The method of claim 22, wherein the enamide compound is selected from the group consisting of:

- N-(6-Methoxy-3H-inden-1-yl)-acetamide;
- N(3,4-dihydro-1-naphtalenyl)acetamide;
- N(3,4-dihydro-naphtalen-2-yl)acetamide;
- N-(2-Phenyl-cyclohex-1-enyl)-acetamide; and
- N-(7-Methoxy-3,4-dihydro-naphthalen-2-yl)-acetamide.

25. (Currently amended) A process ~~suitable for large scale production~~ of enamide ~~derivatives~~ compounds represented by formula (I)



(I)

wherein;

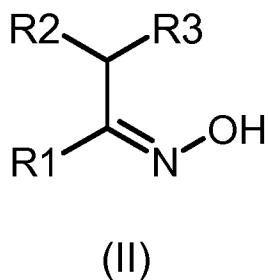
R1 and R2 and R3 are independently selected from the group consisting of a hydrogen atom; an alkyl; a cycloalkyl; a cycloalkylalkyl; an alkylaryl; an aryl; a heterocycle; a cyano; an alkoxy; an aryloxy; a carboxyl; a carbamoyl; -CONR5R6 in which R5 and R6 are independently selected from an alkyl, an arylalkyl, an aryl; and R5 and R6 taken together may form a ring; and -COOR5 in which R5 is selected from an alkyl, an alkylaryl, a cycloalkyl, and aryl;

said alkyl, cycloalkyl, cycloalkylalkyl, alkylaryl and aryl being substituted or not substituted with a group selected from a functional group and R5;

R1 and R2 taken together may form a monocyclic ring ; a di-cyclic ring and a higher polycyclic ring, said ring being substituted or not substituted with a group selected from a functional group and R5;

R4 is selected from the group consisting of a hydrogen atom, alkyl, aryl and alkylaryl; said alkyl, aryl, and alkylaryl being substituted or not substituted with halogen;

said method comprising a hydrogenation/isomerization reaction in presence of a heterogeneous catalyst based on at least one metal selected from Ir and Rh, of an oxime derivative of formula (II)



wherein R1, R2 and R3 are as defined above;

with an acyl derivative of formula (III):



wherein R4 is as defined above;

X is selected from an oxygen atom and a leaving group;

m is an integer selected from 1 and 2;

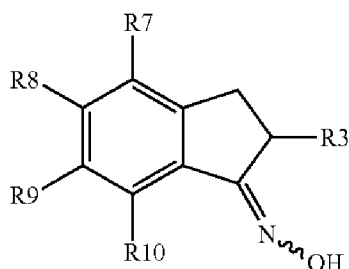
when m is 1 then X is a leaving group; when m is 2 then X is an oxygen atom;

wherein the heterogeneous catalyst is in a form selected from a metal oxide and from a metallic form, optionally supported on a suitable carrier; and is used in an amount ranging between 0.001 and 30% mole, based on the oxime derivative.

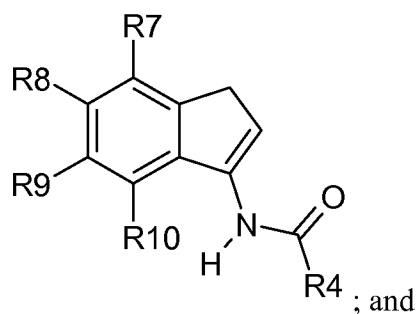
26. (Cancelled)

27. (Previously presented) A method of manufacture of an amine or an amide compound ~~suitable for large scale production~~ comprising

(i) performing a hydrogenation/isomerization reaction of



with an acyl derivative of formula (III)  $(R_4CO)_mX$ , in the presence of a heterogeneous catalyst based on at least one metal selected from Ir and Rh, to form the ene-amide compound of formula (IIE)



(ii) hydrogenating the compound of formula (IIE) to form a chiral amine or a chiral amide,

$R_4$  is selected from the group consisting of hydrogen, alkyl, aryl, and alkylaryl being substituted or not substituted with halogen;  $R_7$ ,  $R_8$ ,  $R_9$  and  $R_{10}$  are independently selected from the group consisting of hydrogen; halogen; a group comprising  $-OH$ ,  $-OR_5$ ,  $-CN$ ,  $-COOR_5$ ,  $-COR_5$ ,  $-CONR_5R_6$ ,  $-OCOR_5$ ,  $-NH_2$ ,  $-NHR_5$ ,  $-NR_5R_6$ ,  $-NO_2$ ,  $-SH$  and  $-SR_5$ , wherein  $R_5$  and  $R_6$  are independently an alkyl, an alkylaryl or an aryl group or  $R_5$  and  $R_6$  taken together may form a ring; alkyl and aryl, while not simultaneously being hydrogen.

28. (New) The process of claim 27, wherein the heterogeneous catalyst is in a form selected from a metal oxide and from a metallic form, optionally supported on a suitable carrier; and is used in an amount ranging between 0.001 and 30% mole, based on the oxime derivative.